REMARKS/ARGUMENTS

Favorable reconsideration of this application, in view of the present amendment and in light of the following discussion, is respectfully requested.

Claims 1-10 and 12-18 are pending. By the present amendment, Claims 1 and 2 are amended, Claim 11 is canceled without prejudice or disclaimer, and Claims 12-18 are added. Support for the present amendment can be found in the original specification, for example, at page 12, lines 13-17 and 20-22, at page 13, lines 3-6 and 16-28, and at page 19, lines 9-12. Thus, it is respectfully submitted that no new matter is added.

In the outstanding Office Action, Claims 1, 4, and 11 were rejected under 35 U.S.C. § 102(b) as anticipated by Ryusuke et al. (Japanese Patent Publication No. 05-009740, hereinafter "Ryusuke"); Claim 2 was rejected under 35 U.S.C. § 103(a) as unpatentable over Ryusuke in view of Grosshart (U.S. Patent No. 5,948,283), and further in view of Kim (U.S. Patent No. 5,983,998); Claim 3 was rejected under 35 U.S.C. § 103(a) as unpatentable over Ryusuke in view of Kazama et al. (U.S. Patent No. 5,567,267, hereinafter "Kazama"); and Claim 5 was rejected under 35 U.S.C. § 103(a) as unpatentable over Ryusuke in view of Otsuki (U.S. Patent Publication No. 2001/0003271).

In response to the outstanding rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a), these rejections are respectfully traversed as discussed below.

Claim 1 recites, *inter alia*, a substrate processing apparatus including "a cooling unit, having a cooling medium, for cooling the sealing member by using a latent heat of vaporization of the cooling medium included therein." Claim 1 also recites that "the cooling unit includes an airtight casing for accommodating the cooling medium therein, the casing has a first end portion and a second end portion, and the first end portion is configured to be inserted into an opening formed through the bottom portion of the processing chamber." Additionally, Claim 1 recites that "the cooling unit further includes a condenser

accommodating therein the second end portion to thereby liquefy, in the second end portion, the cooling medium vaporized in the first end portion."

The substrate processing apparatus recited in Claim 1 includes a sealing member disposed between a bottom of a support of the mounting table and a bottom portion of a processing chamber and a cooling unit. The cooling unit has a cooling medium for cooling the sealing member by using a latent heat vaporization of the cooling medium included therein. Further, the cooling unit includes an airtight casing for accommodating the cooling medium therein. The casing has a first end portion and a second end portion, and the first end portion of the casing is inserted into an opening formed through the bottom portion of the processing chamber. Additionally, the cooling unit includes a condenser accommodating therein the second end portion such that the cooling medium vaporized in the first end portion is liquefied in the second end portion.

Ryusuke describes a container having a body 17 that is used for chemical vapor deposition for semiconductor manufacturing.[1] Additionally, Ryusuke describes that a case 14 is attached to the body 17 of the container and that the top face of the case 14 is covered by a flange 15 which includes a water cooled jacket 16 thereon.[2] The outstanding Office Action, in section 3 on page 3, takes the position that the water cooled jacket 16 described in Ryusuke equates to the claimed "cooling unit."

However, it is respectfully submitted that Ryusuke does not disclose or suggest "a cooling unit ... wherein the cooling unit includes an airtight casing for accommodating a cooling medium therein, the casing has a first end portion and a second end portion, and a first end portion is configured to be inserted into an opening formed through the bottom portion of the processing chamber, wherein the cooling unit further includes a condenser

[1] See Ryusuke, at paragraph [0004].
[2] See Ryusuke, at paragraph [0005] and drawing 8.

accommodating therein the second end portion to thereby liquefy, in the second end portion, the cooling medium vaporized in the first end portion," as recited in amended Claim 1.

Instead, Ryusuke only describes a water cooled jacket 16. It is noted that a water cooled jacket generally performs a cooling operation by way of circulating a cooling medium around a heat source, and thus, the water cooled jacket does not inherently have a condenser which liquefied the vaporized cooling medium. Additionally, as Ryusuke does not describe that the water cooling jacket 16 includes a condenser which liquefied the vaporized cooling medium, the water cooled jacket 16 does not use a latent heat of vaporization of the first cooling medium included therein. Accordingly, Ryusuke does not disclose or suggest "a cooling unit, having a cooling medium, for cooling the sealing member by using a latent heat vaporization of the cooling medium included therein," as recited in amended Claim 1. Also, as can be seen in drawing 8 of Ryusuke, no part of the water cooling jacket 16 is inserted into an opening of the body of the container 17.

In an exemplary film forming process utilizing the substrate processing apparatus recited in Claim 1, the mounting table can be heated to about 300 to 450°C, and the periphery of the cooling unit is also heated to a high temperature. If a water cooled jacket, such as the one described in Ryusuke, were exposed to such a temperature, air bubbles may be generated in a tube as the water therein vaporizes, resulting in the expansion of the tube. In contrast, in the substrate processing apparatus recited in Claim 1, expansion of the casing can be avoided even with the vaporization of the first cooling medium taking place at the first end portion of the casing, because the cooling medium is liquefied at the second end portion by using the condenser. Therefore, the water cooling jacket 16 described in Ryusuke is not the "cooling unit" recited in amended Claim 1.

Accordingly, Ryusuke fails to disclose or suggest every feature recited in amended Claim 1. Thus, it is respectfully requested that the outstanding rejection of Claim 1, and all claims dependent thereon, as anticipated by Ryusuke be withdrawn.

With regard to the rejection of Claim 2 as unpatentable over Ryusuke in view of Grosshart, and further in view of Kim, it is noted that Claim 2 is dependent on Claim 1, and thus is believed to be patentable for at least the reasons discussed above with respect to Claim 1. Further, it is respectfully submitted that Grosshart and Kim do not cure any of the above-noted deficiencies of Ryusuke. Accordingly, it is respectfully submitted that Claim 2 is patentable over Ryusuke in view of Grosshart, and further in view of Kim.

With regard to the rejection of Claim 3 as unpatentable over Ryusuke in view of Kazama, it is noted that Claim 3 is dependent on Claim 1, and thus is believed to be patentable for at least the reasons discussed above.

Kazama describes a plasma etching apparatus 1 including a processing chamber 3 with a susceptor for a position therein for substrate processing.[3] Additionally, Kazama describes that a temperature sensor such as a temperature measurement resistor 21 is arranged in the susceptor 4a.[4] The outstanding Office Action, in section 7 on page 5, takes the position that the temperature sensor 21 described in Kazama equates to the claimed "temperature sensor" recited in Claim 3.

However, it is respectfully submitted that Kazama does not disclose or suggest "a temperature sensor disposed near the sealing member and a cooling unit controller for controlling the cooling unit based on a measurement result of the temperature sensor," as recited in Claim 3.

Instead, as discussed above, the temperature sensor 21 described in Kazama is disposed in a susceptor 4a. Additionally, Kazama describes that another temperature sensor

[3] See Kazama, at column 3, lines 62-67 and column 4, lines 43-52.
[4] See Kazama, at column 5, lines 20-21.

23 is disposed in a heater 19. Thus, neither of the temperature sensors 21, 23 described in Kazama can be used to control a controlling unit to suppress a rise of temperature of the sealing member 12 since neither of the sensors 21, 23 are disposed in a position to measure the temperature of the sealing member 12. Thus, the temperature sensor 21 described in Kazama is not the claimed "temperature sensor."

Therefore, it is respectfully submitted that Kazama does not cure any of the above-noted deficiencies of Ryusuke. Accordingly, it is respectfully submitted that Claim 3 is patentable over Ryusuke in view of Kazama.

With regard to the rejection of Claim 5 as unpatentable over Ryusuke in view of Otsuki, it is noted that Claim 5 is dependent on Claim 1, and thus is believed to be patentable for at least the reasons discussed above with respect to Claim 1. Further, it is respectfully submitted that Otsuki does not cure any of the above-noted deficiencies of Ryusuke. Accordingly, it is respectfully submitted that Claim 5 is patentable over Ryusuke in view of Otsuki.

New Claims 12-18 are supported by the originally filed specification, for example, at page 12, lines 20-22, at page 13, lines 3-6 and lines 18-26, and at page 19, lines 9-12. Thus, it is respectfully submitted that no new matter is added. Additionally, it is noted that Claims 12-18 depend on Claim 1. Therefore, it is respectfully submitted that Claims 12-18 patentably define over the cited references for at least the reasons discussed above.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. A Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

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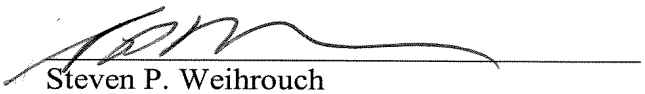

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